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Pages 606, 614, 618, 622, and 643 of the reference are furnished, but the Notice of References Cited says that the relevant portion is the "Section on Titanium alloys..." If the rejection is maintained, Applicant asks that the Examiner provide and make of record the entire "Second on Titanium alloys..." in view of the fact that at least one of the applied references deals with an alpha-titanium alloy, not an alpha-beta titanium alloy.

The following principle of law applies to all sec. 103 rejections. MPEP 2143.03 provides "To establish prima facie obviousness of a claimed invention, all claim limitations must be taught or suggested by the prior art. In re Royka, 490 F2d 981, 180 USPQ 580 (CCPA 1974). All words in a claim must be considered in judging the patentability of that claim against the prior art. In re Wilson, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970)." [emphasis added] That is, to have any expectation of rejecting the claims over a single reference or a combination of references, each limitation must be taught somewhere in the applied prior art. If limitations are not found in any of the applied prior art, the rejection cannot stand. In this case, the single applied prior art reference clearly does not arguably teach some limitations of the claims.

Claim 1 and claim 12 each recite in part:

"second cooling the article to a temperature of less than about 800°F at a second cooling rate that does not exceed about 15°F per second"

The reference has no such teaching.

The explanation of the rejection recognizes that the reference has no such teaching. The explanation instead asserts that "ASM vol. 2 teaches (page 618) that parts of the alloy composition should be cooled at a slow rate in order to not induce residual stresses." A portion of the right hand side of page 618 is not legible in the copy

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furnished, due to the manner of photocopying. However, if the asserted teaching statement is meant to rely on the portion of page 618 in the last column, next to last paragraph, beginning "Uniformity...", then in fact the reference has no such teaching. (If the asserted statement is meant to rely on some other portion of the reference, Applicant asks that it be pointed out with particularity.) The reference says that oil or water quenching should not be used to accelerate cooling. There is no teaching of a slow cooling rate, and specifically no teaching of the recited limitation quoted above.

The explanation of the rejection further asserts that "such means inherently have a cooling rate of less than 15°F per second." Applicant traverses this position. MPEP 2112-2113 sets forth the law on inherency. Inherency is not to be taken lightly and not to be asserted unless there is good evidence to suggest that the asserted property or characteristic is necessarily present in the teachings of the prior art reference. The concept of inherency is not provided as a way to fill in the gaps in missing disclosure or teachings based upon speculation, unless the asserted property or characteristic may be shown to be necessarily present by objective evidence. Instead, "inherency" is used when every aspect of the disclosure of a reference and the claimed subject matter are otherwise exactly the same, then it may be inferred that some property or characteristic further recited in the claim must necessarily be present in the art reference. MPEP 2112 provides "The fact that a certain result or characteristic may occur or be present in the prior art is not sufficient to establish the inherency of that result or characteristic. In re Rijckaert, 9 F.3d 1531, 1534, 28 USPQ2d 1955, 1957 (Fed. Cir. 1993); In re Oelrich, 666 F.2d 578, 581-82, 212 USPQ 323, 326 (CCPA 1981). "To establish inherency, the extrinsic evidence 'must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill. Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient.'" In re Robertson, 169 F.3d 743, 745, 49 USPQ2d 1949, 1950-51 (Fed. Cir. 1999) (citations omitted) "In relying upon the theory of inherency, the examiner must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows

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from the teachings of the applied prior art." Ex parte Levy, 17 USPQ2d 1461, 1464 (Bd. Pat. App. & Inter. 1990)"

If these rejection is maintained, Applicant asks that the Examiner provide the basis in fact or technical reasoning that the claim limitation "second cooling rate that does not exceed about 15°F per second" necessarily flows from the teaching of the reference that "oil or water quenching should not be used..."

Claims 4, 5, and 16 each recite in part:

"wherein the step of processing includes the step of
forging the article at the first-heating temperature"

or the like. Certainly Table 15 of the reference teaches that the forging temperature is 1650-1775°F. However, there is no teaching that this forging is to be combined with the heat treatment processing discussed under the Beta Quench in Table 19. If there is any information to that effect, Applicant asks that it be set forth or that the rejection be withdrawn. Otherwise, this portion of the rejection should be withdrawn.

Claims 6 and 17 each recite in part:

"weld repairing the article at the first-heating temperature"

The reference has no such teaching. The reference teaches that weld repair may be performed, but it has no teaching that the weld repair is performed at the first heating temperature.

Claim 8 recites in part:

"second cooling the article at the second cooling rate of from about 1°F per second to about 15°F per second"

The reference has no such teaching. Applicant incorporates the prior discussion and requests regarding the concept of inherency.

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Claims 9 and 19 each recite in part:

"stress relieving the article at a temperature of from about 1000°F to about 1050°F"

The reference has no such teaching. The explanation of the rejection relies on "inherency". Applicant incorporates the discussion and requests from the prior discussion of inherency. That a

Applicant asks that the Examiner reconsider and withdraw this ground of rejection.

Claims 2, 3, 14, and 15 are rejected under 35 USC 103 over ASM in view of Ruckle '092. Applicant traverses this ground of rejection.

The rejected claims incorporate the limitations of their parent claims, which are not taught by the ASM reference for the reasons stated above, and which are incorporated here. Ruckle adds nothing in this regard.

Ruckle teaches a heat treatment completely different than, and at odds with, the that taught by ASM and with the present approach. For example, Ruckle teaches that the article is rapidly cooled to produce a martensitic microstructure, and then the martensitic microstructure is thermally decomposed at a temperature in the range of 1500-1825°F (see col. 5, lines 7-9--there is a typo in claim 1 of Ruckle). The portion of Table 19 of ASM that is relied upon requires that there be a solution treat, above the beta transus, a water quench, and a tempering at 1202-1382°F. These two processing treatments are utter incompatible.

MPEP 2143.01 provides that, in constructing a sec. 103 rejection, the proposed modification cannot render the prior art unsatisfactory for its intended purpose or change the principle of operation of a reference. MPEP 2143.02 requires that, in combining the teachings of two references, there must be a reasonable expectation of success in the combination. Both of these mandates would be violated in the proposed

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approach of combining the teachings of ASM and Ruckle.

The thrust of the rejection has been to select particular teachings of Ruckle that are argued to support the rejection, but ignore those which teach away from the invention. The selective use of only the helpful teachings of a reference, and not giving weight to the overall teachings of the reference, in this manner is a per se hindsight reconstruction. This approach is not proper. In In re Mercer, 185 USPQ 774, 778 (CCPA 1975), the CCPA stated:

"The relevant portions of a reference include not only those teachings which would suggest particular aspects of an invention to one having ordinary skill in the art, but also those teachings which would lead such a person away from the claimed invention. See In re Lunsford, 53 CCPA 986, 357 F.2d 380, 148 USPQ 716 (1966)."

"The Board's approach amounts in substance, to nothing more than a hindsight 'reconstruction' of the claimed invention by relying on isolated teachings of the prior art without considering the over-all context within which those teachings are presented. Without the benefit of appellant's disclosure, a person having ordinary skill in the art would not know what portions of the disclosure of the reference to consider and what portions to disregard as irrelevant, or misleading. See In re Wesslau, 53 CCPA 746, 353 F.2d 238, 147 USPQ 391 (1965)."

The present rejection seeks to perform a hindsight reconstruction based upon unrelated references, which is technically unsupported and is legally improper.

The case authority and the MPEP provide guidance on this point. The present rejection is a sec. 103 combination rejection. It is well established that a proper sec. 103 combination rejection requires more than just finding in the references the elements recited in the claim (but which was not done here). To reach a proper teaching of an article or process through a combination of references, there must be stated an objective motivation to combine the teachings of the references, not a hindsight rationalization

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in light of the disclosure of the specification being examined. MPEP 2143 and 2143.01. See also, for example, In re Fine, 5 USPQ2d 1596, 1598 (at headnote 1) (Fed.Cir. 1988), In re Laskowski, 10 USPQ2d 1397, 1398 (Fed.Cir. 1989), W.L. Gore & Associates v. Garlock, Inc., 220 USPQ 303, 311-313 (Fed. Cir., 1983), and Ex parte Levengood, 28 USPQ2d 1300 (Board of Appeals and Interferences, 1993); Ex parte Chicago Rawhide Manufacturing Co., 223 USPQ 351 (Board of Appeals 1984). As stated in In re Fine at 5 USPQ2d 1598:

"The PTO has the burden under section 103 to establish a prima facie case of obviousness. [citation omitted] It can satisfy this burden only by showing some objective teaching in the prior art or that knowledge generally available to one of ordinary skill in the art would lead that individual to combine the relevant teachings of the references."

And, at 5 USPQ2d 1600:

"One cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention."

Following this authority, the MPEP states that the examiner must provide such an objective basis for combining the teachings of the applied prior art. In constructing such rejections, MPEP 2143.01 provides specific instructions as to what must be shown in order to extract specific teachings from the individual references:

"Obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention when there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. In re Fine, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988); In re Jones, 958 F.2d 347, 21 USPQ2d 1941 (Fed.

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Cir. 1992)."

* * * * *

"The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination." In re Mills, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990)."

* * * * *

"A statement that modifications of the prior art to meet the claimed invention would have been 'well within the ordinary skill of the art at the time the claimed invention was made' because the references relied upon teach that all aspects of the claimed invention were individually known in the art is not sufficient to establish a *prima facie* case of obviousness without some objective reason to combine the teachings of the references. Ex parte Levingood, 28 USPQ2d 1300 (Bd.Pat.App.& Inter. 1993)."

Here, there is set forth no objective basis for combining the teachings of the references in the manner used by this rejection, and selecting the helpful portions from each reference while ignoring the unhelpful portions. An objective basis is one set forth in the art or which can be established by a declaration, not one that can be developed in light of the present disclosure. If the rejection is maintained, Applicant asks that the Examiner set forth the objective basis found in the references themselves for combining the teachings of the references.

The explanation of the rejection suggests that the basis for combining the teachings is that "such an alloy has desirable strength properties for such an application." It is completely uncertain as to which alloy and which processing are referred to. The processing of ASM and Ruckle are metallurgically inconsistent, so it is not possible to tell what the strength properties might be, because there is no way to know which processing steps are to be selected. Ruckle teaches an approach for processing using his teachings, not those of ASM.

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If the rejection is maintained, Applicant asks that the Examiner indicate specifically which processing is to be selected of the inconsistent processing approaches of the two references, and the objective (not hindsight) basis for selecting that processing.

Applicant asks that the Examiner reconsider and withdraw this ground of rejection.

Claims 7, 10, 11, 18, 19, 20 and 21 are rejected under 35 USC 103 over ASM in view of Whang '826. Applicant traverses this ground of rejection.

ASM has been discussed above, and that discussion is incorporated herein. The heat treatment relied upon in forming the rejection is taught in Table 19 of ASM, which deals with alpha-beta titanium alloys, see caption to Table 19. Whang deals with a completely different subject matter, precipitation hardening of rapidly solidified alpha or near-alpha titanium alloys (see, for example, Abstract, first two lines; col. 4, lines 1-18). The present approach deals with alpha-beta titanium alloys. Thus, the suggestion that any teaching of aging times in Whang is applicable to either the approach relied upon from ASM or to the present approach is completely misplaced.

Applicant incorporates the prior discussion and requests related to the impropriety of inconsistent teachings and the need for an objective basis for combining the teachings of two inconsistent references.

Applicant asks that the Examiner reconsider and withdraw this ground of rejection.

Applicant submits that the application is in condition for allowance, and requests such allowance.

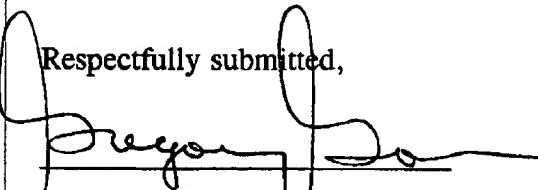
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I hereby certify that this paper (10-page Amendment, 1-page Petition for Extension of Time, 1-page Fee Transmittal, for 12 pages total) is being facsimile transmitted to the Patent and Trademark Office at fax 703-872-9310 on December 23, 2002.

Respectfully submitted,


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